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JUNE 3 1891

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Among the contents of next week's issue (No. 172) will be the following articles:

The North Woods.
Editorial.

Alnus maritima. (With figure.)
By Professor Sargent.

How We Renewed an Old Place. VIII.
By Mrs. J. H. Robbins.

Orchard Fruits for Home Use.
By Dr. T. H. Hoskins.

The paper will contain an illustration of a Hunter's Lodge in Potsdam, from a photograph, and a figure of Alnus maritima, from a drawing by Mr. C. E. Faxon.

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Matters of Taste.

THE expression, "It is a matter of taste," is often used to signify that no rules or principles can be applied to the subject which is thus indicated, and it is a popular notion that a matter of taste supplies opportunity for absolute choice or caprice, and that one decision or preference is as good and as appropriate as another. But the faculty of discerning beauty, order, congruity, proportion, symmetry and whatever constitutes excellence in landscape-gardening requires cultivation and intelligent direction. The notion that whatever accords with the whims or preferences of the owner is for that reason fit and right, is constantly used to justify all kinds of unintelligent and unpleasing arrangement of the grounds about dwellings.

It is every year becoming more important to obtain general recognition in this country for the truth that in matters of taste, appearance or beauty, pleasing effects do not depend on caprice, but that the character of results is determined by the arrangements and conditions of each particular case—that is, by facts and principles which should be recognized and regarded in practice. Of course there are often matters pertaining to the plan and treatment of the grounds about dwellings which afford opportunity for unrestricted choice. These are usually features or questions of comparatively slight importance, and the preferences of the owner constitute the only standard of judgment which it is necessary to apply. The error which constantly leads to undesirable results is the popular belief that all matters of taste are of this character; that they lie outside of the realm of rules and principles, and that what pleases the owner of the grounds is necessarily good.

If people could be brought to recognize the distinction between the two classes of subjects or questions connected with the arrangement and treatment of grounds about dwellings, the one made up of matters in which one method may be as good as another and the owner's choice is the only law, the other requiring the application of an intelligent and cultivated judgment in order to reach any satisfactory result, it would be the means of greatly improving the appearance of thousands of places, and it would also increase the value of residence property in nearly all the towns of our country. The appearance or effect of permanence, and of the peacefulness and comfort which ought to belong to a home, can be produced only by the adaptation of means and plans to these ends. The position of the house in the grounds, and the relation between its character and that of its permanent surroundings, the disposition of shrubbery and of roadways, and the connection between the lawns and the public streets or highways, are all questions requiring intelligence for their decision. There are principles and laws involved which cannot be safely disregarded, and pleasing effects and impressions can result only from arrangements and combinations which are in their nature adapted to produce them. An unsightly building may be made to appear more distant, and less intrusive and aggressive, by a hedge or line of shrubbery which does not conceal half of its height, and this effect follows whether it is expected and understood or not. A small lawn fronting a public street or roadway which is a wide area of dust, with only a ragged, irregular edging of grass, may have in itself a pleasing effect if it is in some way definitely separated from the street. The limit or barrier may be a slight fence, hedge or wall, but a plain line of demarcation is necessary between the homogeneous and successful expanse of greenery on the one side, and the chaotic domain of ugliness on the other. While the barrier is maintained—it may be a barrier for the eye only—the verdant smoothness of the lawn makes a satisfactory impression. It is so much that has been redeemed from the waste which still exists beyond the wall, and for this outside desolation the lawn is clearly not responsible. But if the limit between the lawn and the street is removed, then the unsubdued ugliness of the street becomes a part of the lawn, and the lawn is dominated and dwarfed by it, and appears unfinished and unsuccessful.

An Interesting Rediscovery.

MRS. J. G. SMYTH, of Greenville, South Carolina, sends us fresh flowers of *Lonicera flava*, gathered by herself on Paris Mountain, probably in the very spot where this plant was last seen growing wild by any botanist. This was in the year 1810, when John Fraser, a Scotch collector, paid a visit to Paris Mountain and gathered seeds or roots of this plant and sent them to England. From the descendants of these plants of Fraser's kept in gardens has been preserved the knowledge of this beautiful species. Last year a figure and description of *Lonicera flava* were published in this journal (vol. iii., 187, f. 187), and the interest this excited in what appeared to be a "lost plant" led our correspondent to investigate Paris Mountain, a low outlying spur of the Blue Ridge which rises from the plain close to Greenville. Her search was successful, and on the 27th of April Mrs. Smyth found the Honeysuckle in flower, and now sends us specimens with this note:

The plants were found, and this was the only place, on the north side of the mountain, a hundred and fifty or two hundred feet from the top or highest point of the mountain, which is 2,054 feet above the level of the sea. The Lonicera was growing in a very rocky place, about fifteen or twenty feet square, a place which looked, except for the many and large rocks scattered over it, as if it might have been a cleared spot. All around and about it the original foliage of the forest had never been disturbed, tall Oaks and Chestnuts, and the thick undergrowth of Azaleas and Rhododendrons forming a dense shade. The soil is rich and black from the long accumulation of leaf-mold, damp and rich, and just such a soil as the Rhododendron grows and thrives in. The stems are not more than two feet high, but I thought would have grown longer if there had been any support for them to cling to and run on. The roots send out long runners, and these send up shoots from every little point, so that in trying to get a root one might pull up yards and yards before it would break.

Lonicera flava is one of the rarest of American plants, and although it has been known from the very beginning of the century, there is apparently no evidence that it grows anywhere except in this one spot on Paris Mountain. Mrs. Smyth's most interesting discovery removes another from the now short list of plants known to our early botanists, but unknown to their successors. Now that Darbya, Shortia and *Lonicera flava* have been found again, *Gordonia Altamaha* and *Illicium parviflorum* are the only prizes left among species known to have existed to reward the botanical collector in the south Atlantic states. It is a curious fact that both of these plants, like *Lonicera flava*, have been preserved in gardens for nearly a century, although all recent efforts to find them in their native haunts have failed.

In another column of this issue a correspondent expresses a mild disappointment in the gardens of Bermuda because they fail to display that richness and variety of material which one would expect to find in such favorable soil and climate. No doubt there is some justice in this criticism, but the same is true of the gardens in nearly every other portion of the civilized world. The fundamental error usually consists in ignoring the peculiar natural conditions of the place and endeavoring to construct a garden or to modify a landscape in accordance with some foreign ideal. The perfect English lawn is a delight to every one who sees it under English skies, but over a large portion of the world greensward is unknown and impossible, and in such places it is worse than a waste of energy to strive for any garden effects in which a stretch of clipped grass is the prevailing feature. And even in certain regions where grass might be persuaded to grow with careful nursing such lawns may be misplaced, as, for instance, among the rocky ledges, dwarf Cedars and scrub Birches of our wild north-eastern coast. In the same way a sub-tropical garden rarely looks happy in the north, even during the heat of our short summers, and if this tender vegetation could be induced to thrive it would still appear misplaced among the sturdy trees and shrubs and herbs which look fearlessly forward to the approach of winter.

The true method everywhere, and this is the first canon of all garden art, is to study the native and peculiar beauty of the place and then endeavor to unfold and enhance it, resisting every temptation to give it an alien air by decorating it with foreign and incongruous finery. This is the fundamental charm of all the famous gardens of the world. The English lawn itself is beautiful in England because it is the legitimate outgrowth of English natural scenery, while the Park of Muskau and the gardens on the shores of the Mediterranean emphasize the same teaching. In every successful instance art comes to the help of nature, working in accordance with the informing spirit of the scene. Wherever, on the contrary, attempt is made to oppose or thwart nature the end will be disaster. It would not be strange if the Bermudians had committed some errors of this sort. If they have endeavored to provide themselves with English gardens in a latitude south of that where the finer grasses thrive, their lawns will give them little satisfaction. It would be a natural mistake on their part to try the strictly tropical plants which clothe some of the West Indies with such luxuriant beauty, for they have intimate commercial relations with these islands, and, of course, are familiar with their flora, but Tree-Ferns and Crotons could hardly endure the chill of the more northern islands. Again, these islanders are in the habit of visiting our northern states in summer, and, after enjoying the singular beauty of our flowering shrubs and trees and hardy plants, they have endeavored to naturalize many of them. Here, too, failure was inevitable. Plants which can endure a long winter are rarely hardy enough to survive an almost endless summer, and, therefore, most of the Hybrid Perpetual Roses and scores of shrubs and trees from our nurseries have been planted in Bermuda only to perish.

But, although mistakes may have been made in planting on these islands, we must acknowledge quite as serious and even more prevalent errors at home. Taken as a whole, Bermuda scenery has a singular charm for northern eyes, and the possibilities of gardening there are endless. Most of the delightful plants which thrive just outside the borders of the tropics would here make themselves at home, and, having been developed in similar climatic surroundings, would blend harmoniously with the native growth. Olives, Laurels, Myrtles, Magnolias, Rhyncospernmums, Laurestinus, Gardenias and Pittosporums, with Cycads, Yuccas, Aloes, Agaves, Euphorbias and other plants which brighten the gardens of southern Europe, ought to thrive here. The Cherokee Rose, if introduced, might soon be as common as it is in our southern states, while *Pinus Cubensis* and other southern conifers ought to live happily among the native Cedars.

But, after all, there are only a few chosen spots in all the world where the art of the gardener is so little needed as it is here to supplement the beauty with which nature has already endowed them. Instead, therefore, of regretting that man has done no more to enhance the beauty of these islands, we ought to be grateful that he has done so little to mar it.

Sir Christopher Wren as a Gardener.

One usually connects the name of Sir Christopher Wren only with the erection of city churches, but he deserves at least a little niche in the memory of those whose chief concern is with plants and with the useful or ornamental disposition of the surface of the ground. I cannot discover what share he may have taken in arranging the grounds of the country homes he built or altered, but we can fancy that he may have been active in this direction, for the art of gardening was then still in its strictly formal phase, the immediate surroundings of great country houses were architectural in design, and clients were wise enough to know that the same artist who planned the structure itself should be consulted about its accessories. Moreover, there is historical witness to the fact that once at least he shared in the arrangement of a famous garden. About the year 1690 Queen Mary engaged Wren to make alterations in Cardinal Wolsey's former palace of Hampton Court; and, though I cannot find any detailed account of what his work on the gardens was, it is known that they were included with his purely architectural problems. "Queen Mary," says Wren's latest biographer, Miss Phillimore, "though she amused herself with planning the gardens and making suggestions, had yet the wisdom to defer to Wren's better taste and knowledge. Her husband, with characteristic obstinacy, insisted on his own ideas, thereby dwarfing the cloisters and marring much of the architecture. It is, however, fair to say that King William always owned that the defects were his, the merits Wren's; and these merits were very great as any one who knows the fine old palace, with its rich red brick, its arcades and the quaint formal gardens, will readily allow. He built, at about the same time, the Pavilion and the Ranger's House in Bushey Park."

But it is in Wren's writings that we find what will be of most interest to the readers of Garden and Forest. No man ever worked harder at his own profession than he, even during the later years of his long life; yet he found time to investigate many other intellectual questions and occasionally to write about them. An article, "On the Surface of the Terrestrial Globe," is mentioned by biographers, but is no longer extant. Another, however, "On the Rising of Sap in Trees," has been preserved. In full it exists only, I believe, in a manuscript inserted in a volume of the "Parentalia," a folio book of family memoirs published by Sir Christopher's grandson, and now itself a rarity. But some extracts from it are printed by Miss Phillimore and are valuable as showing how such a subject was approached, just two centuries ago, by a man who, although he was not a naturalist, had one of the acutest and most cultivated intellects of the time.

"It is wonderful," writes the great architect, "to see the rising of the sap in Trees. All will bleed more or less when they are tapped by boring a hole through the Bark, some very considerably, as the Birch, which will afford as much liquor every day almost as the milke of a cow; in a Vine when a bough is cut off it will if not stopped bleed to death. Now by what mechanism is water raised to such a height as in Palmitos to 120 foot high? A skillfull Engineer cannot effect this with-

out great force and a complicated engine, which Nature does without sensible motion; it steals up as freely as the water descends; the reason of this is obscure as yett to naturalists." Various theories which Wren then quotes are not explained by his biographer, but, she tells us, he shows by a little marginal drawing "that the onely Vicissitudes of heat and cold in ye aire is sufficient to raise the sap to the height of the loftiest trees." Mechanical explanations are then given to refute the idea that there is "a secret motion in nature contrary to that by which plants aspire upwards." And in conclusion Wren says: "But though I have shown how the sap may be mechanically raised from the Root to the top of the loftiest trees, yett how it comes to be varyed according to the particular nature of the Tree by a Fermentation in the Root; how the Raine water entering the Root acquires a spirit that keeps it from freezing, but also gives it such distinguishing tastes and qualities, is beyond mechanical Philosophy to describe and may require a great collection of Phenomena with a large history of plants to shew how they expand the leaves and produce the Seed and Fruit from the same Raine water so wonderfully diversified and continued since the first Creation."

Special students of such questions would be glad to see the explanatory passages omitted from these quotations, although, of course, we can understand how they did not find a place in a general biography of the architect. But it is certainly interesting to discover that a man so practical and sensible as Wren, seems to have anticipated a day when even such secrets as the transmutation of inert into living matter would be explained. Unfortunately, our "collection of Phenomena" and our histories of plants, vastly though they have increased during the past two centuries, have brought us no nearer to the reading of riddles of this sort.

When discussing the condition of the churches of London and the best way of repairing them, Sir Christopher once wrote: "As to roofs, good oak is certainly the best, because it will bear some negligence. The churchwardens' care may be defective in speedy mending drips; they usually whitewash the church, and set up their names, but neglect to preserve the roof over their heads. . . . Next to oak is good yellow deal, which is a timber of length, and light, and makes excellent work at first, but, if neglected, will speedily perish; especially if gutters (which is a general fault with builders) be made to run upon the principal rafters, the ruin of the church may be sudden. Our sea-service for oak and the wars in the North Sea make timber at present of excessive price. I suppose, ere long, we must have recourse to the West Indies, where most excellent timber may be had for cutting and fetching."

Wren lived, as I have said, before the time when naturalistic methods of gardening art were introduced, and very long before the establishment of great rural cemeteries for the reception of the dead of cities. In his day it was customary to bury in churchyards and actually within the walls of churches, even in the densest parts of London. But he was too intelligent a man not to protest against so dangerous a practice, and, in one of the many reports on architectural and urban questions which he wrote, we find what his conception was with regard to the proper disposal of the dead. If they are not interred in or near the city churches, he says, "It will be enquired, where then shall be the burials? I answer, in cemeteries seated in the outskirts of the town. . . . A piece of ground of two acres in the fields will be purchased for much less than two roods among the buildings; this being enclosed with a strong brick wall, and having a walk round, the two cross walks decently planted with yew trees, the four quarters may serve four parishes, where the dead need not be disturbed at the pleasure of the sexton or piled four or five upon one another or bones thrown out to make room. . . . It may be considered further, that if the cemeteries be thus thrown out into the fields, they will bound the excessive growth of the city with a graceful border, which is now encircled with scavengers' dung-stalls." To-day we should hardly consider such cemeteries a "graceful border" to a city, although, it must be confessed, too many in America are encircled by the more unpleasant heaps of refuse with which Sir Christopher desired to do away. His words convey, I may add, an exact picture of many cemeteries still in use near European towns; but, though they are much larger than the churchyards which preceded them, the horrible results of overcrowding cited by Wren as existing in such yards may often be witnessed within their wider yet now insufficient and inelastic walls. I have myself seen, in German cemeteries in the outskirts of cities of the first class, even the piling of three or four bodies one upon another, and this not in portions devoted to the poor, but in lots owned by aristocratic families.

New York. *M. G. Van Rensselaer.*

Native Shrubs of California.—VI.

AGAINST the five or six native species of Plum with which the Atlantic states are credited, the Pacific coast has only one, though this appears in different localities under two very well marked varieties. The type is *Prunus subcordata*, Benth. (Pl. Hartav., 108). The variety *Kelloggii*, Lemmon (Piltonia, ii., 67), is not well known, and may possibly, at some future day, be admitted in the rank of a species. But the species, in the typical form, is common in many parts of California, though along the seaboard it is so rare as to have escaped the notice of all the early explorers, Menzies, Chamisso, Douglas, and even Nuttall. Not until the year 1847, when Hartweg botanized up the Sacramento to the foothills of the Sierra, was our Wild Plum brought to the knowledge of botanists.

It is a common observation that, in many genera of plants common to the Old World and the New, it is the Pacific coast species, rather than those of Atlantic America, which make the nearest approach to Old World types; and this holds good in respect to the Californian Plum. It is more intimately related to *Prunus domestica* and other European or Asian Plums than are any of the Atlantic coast species. Indeed, the Atlantic group, by their divergence from the Plum-tree genus in one or two particulars, were what led certain eminent botanists to regard Plums and Cherries as congeneric. In the Old World the Plums, as a genus, have this fine mark, that their leaves are rolled up from edge to edge in the bud, while the Cherries all have theirs folded together lengthwise. But all the Plum-trees indigenous to Atlantic North America have been found to agree with the Cherry-trees in that their foliage is conduplicate in the bud. Our *Prunus subcordata* is not at agreement with its American cousins in this regard, but has that rounded foliage, convolute in the bud, which betrays its closer affinity with the species of another continent. In the color, texture and flavor of its fruit it is, however, quite like the other American Wild Plums, and the quality is variable, according to the locality. And, although exotic Plums are cultivated with all success in almost every part of California, the improvement of our native species has not been neglected. In some instances cultivated seedlings from this parentage are said to have already yielded fruit very superior in size and quality to the last products of the wild tree.

As above intimated, the shrub is not common except in the lower altitudes of the Sierra Nevada. There, and especially toward the northern parts of the state, it is plentiful along streams, where, attaining the shape and dimensions of a small tree, it forms considerable thickets, and, in places remote from the older and fruit-growing settlements, the wild plums are valued, and are, in fact, not far inferior in quality to some of the domestic sorts. In the coast range I know of no locality where the species is at all common. One small clump of it, in a cañon a few miles east of Oakland, and another on the grounds of the University at Berkeley—in a secluded nook, where it is no doubt spontaneous—are all I have been able to record as Bay-district stations for it. These bushes flower in March, and the blossoms, of rather large size for those of a wild Plum, in fading assume a rosy tint, such as I have not otherwise noticed in Plum blossoms.

Neither the Atlantic slope of North America nor the Pacific slope proper has any native species of the Peach and Almond genus, Amygdalus; but the Mexican region, including its northern extension, the Interior Basin of the United States territory, has, perhaps, three or four. At least one of these, *Amygdalus Andersonii*, Greene (Fl. Fr., 49), comes within the borders of California, east of the Sierra Nevada, and is no rarity among the rocky hills and mountains which enclose the great Colorado Desert of the southern counties. The shrub was first made known to botanists under the generic name of Prunus, and hence it has been called the Desert Plum. But whoever sees it in flower will recognize it at a glance as congeneric with the Peach and Almond, rather than with the Plums. When out of bloom it is about as inconspicuous as other desert shrubs, for the foliage is both small and sparse. Its associates are the smaller Agaves, Yuccas, and the bristling Opuntias and other Cacti which prevail in those verdureless and almost rainless districts; and then, rooted firmly in the scant soil of crevices and fissures of sunburnt rocks, in February it clothes itself with a fine display of rose-red blossoms, and so becomes an ornament to a hard landscape otherwise enlivened at this season only by the red and yellow of certain Cactus-blossoms. The shrub is low and bushy, perhaps seldom attaining a man's height; and to its flowers there succeed in their season the small velvety drupes, scarcely more than a half-inch long, which, when ripe, divest themselves of their

thin fleshy external coat, after the manner of the common Almond, and expose a small, nearly smooth putamen, or nut. I have not heard of any attempts to cultivate this native Almond, either in the fertile and fruitful regions of California proper or elsewhere. It is even something of a rarity in the herbariums of the botanists, though this is owing simply to the fact that the desolate and uninviting regions which it inhabits are so seldom visited and so little cultivated by even the most zealous of botanical collectors.

University of California. *Edward L. Greene.*

New or Little Known Plants.

The Japanese Hamamelis.

THE Witch Hazel (*Hamamelis Virginica*) of eastern America, with its bright yellow flowers which cover the branches late in the autumn as the leaves, which are then orange and scarlet, are falling, is one of the most common and best known of our woodland shrubs or small trees. The genus is confined to eastern America, where a single species occurs, and to eastern Asia, with a Japanese species, and another which has been discovered recently on the mountains of central and western China. The characters which are used to distinguish these plants are not important, and to botanists, who look to species largely, and do not give great weight to geographical distribution as a factor in their establishment, the three Witch Hazels might be considered forms of one species, slightly differentiated by local surroundings.

Hamamelis Japonica (Fig. 45), as it appears in the Arnold Arboretum, can only be distinguished from our American plant by its rather smaller and somewhat thicker, more prominently veined leaves of a duller green on the upper surface, and by the fact that the flowers appear in February or in early March instead of in the autumn. The number of the nerves of the leaves by which Siebold & Zuccarini (*Sitz. Akad. Münch.*, iv., ii., 193) endeavored to distinguish the Japanese from the American species is variable, as has already been pointed out by Franchet & Savatier ("Enum. Pl. Jap.," ii., 368); and in our cultivated Japanese plant the leaves are very constantly five or six-nerved, like those of the American species. The color of the inner surface of the calyx-lobes has also been used to distinguish the Japanese plant. On many of the plants cultivated in Europe, and in the wild specimens gathered in Japan which I have seen, the inner face of the revolute calyx-lobes is dull red. The effect of the contrast between the red color of the calyx and the bright yellow of the petals is striking and handsome, and makes this form the most attractive, probably, of the Witch Hazels at the time of flowering. But this color of the sepals does not seem to be constant. On the plants in the Arboretum, which were originally derived from Segrez, the interior of the calyx is dull yellow-brown, and the flowers can hardly be distinguished from those of the American plant except in their rather smaller size. Another difference between the Japanese plant, as it appears in the Arboretum, and the American species is found in the size of the persistent fruiting calyx, which in the Japanese plant is confined to the base of the fruit, while in the American plant it varies from a third to half the length of the capsule. The relative size of the mature calyx to the fruit appears to vary, however, on different individuals, and therefore does not afford a character of much value. Siebold & Zuccarini (*l. c.*) found that the calyx was attached to the base of the fruit only; Sir Joseph Hooker (*Bot. Mag.*, t. 6659) found the same to be true on all the specimens he was able to examine, while Franchet & Savatier (*l. c.*), on the contrary, remarked that "in all the specimens of *H. Japonica* with ripe fruit that we have before our eyes the degree of adherence of the fruit to the calyx differs from a quarter to nearly a half; not one of them is attached by the base only; and it is not possible to consider this peculiarity as a specific character." Franchet & Savatier speak of the flowers of the Japanese and of the American species as identical, and it is possible, although hardly probable, that the flora of Japan may contain two species—one with the red calyx of the plant, which seems to be the only one cultivated in England,* and the other with the yellow flowers of the plant which is figured on page 257. It is interesting in this connection as bearing, perhaps, on the tendency of Hamamelis to vary in the color of its flowers to note that I have recently received flowers of the American Hamamelis with bright red petals found on a wild plant in Malden, in this state.

Hamamelis Japonica is described as a small tree in its native country. Here it forms a spreading shrub of straggling habit, four or five feet high, with stout ashy-gray branches which are at first pubescent but become glabrous in their second year, and marked, like those of the American species, with small pale lenticels. The leaves are obovate, sinuately crenate and sharply toothed above the middle, five or six-nerved, rounded or acute at the apex, wedge-shaped or contracted into a narrow rounded base, long-petioled, with prominent midribs and nerves grooved on the upper surface. They are dark green and glabrous above, and are coated on the lower surface with pale or rufous persistent pubescence, and are from two to two and a half inches long by an inch or an inch and a half broad. The flowers are produced in subsessile clusters. The calyx is a quarter of an inch across, with lobes which are rounded at the apex, slightly ciliate on the margins, dull orange-yellow, and reflexed at the flowering period. The petals are strap-shaped, three-quarters of an inch long, rounded or truncate at the apex, and bright canary yellow. The filaments, like those of the American plant, are short and stout, the fertile anthers opening from the front. The carpels are silky-pubescent, with filiform styles. The capsule is subglobose, rather less than half an inch long, covered with bright brownish tomentum, and surrounded at the base only with the remnants of the calyx.

Hamamelis Japonica grows very slowly here, and, from present appearances, will never become a tree. It is very hardy, and the first shrub of the year to flower in the Arboretum. The flowers are bright and cheerful, and their earliness gives to this plant considerable value as a garden-plant, apart from the botanical interest which is attached to it. The red-flowered form is not in the Arboretum, but, judging from the figures which have been published of it, it is a more desirable garden-plant than the form which is figured in this issue, and the most showy member of the genus.

C. S. S.

Ravenea Hildebrandtii.

THIS elegant little Palm was discovered in the Comoro Islands, between Madagascar and Zanzibar, by the German collector after whom it is named, and was introduced by means of seeds into the Berlin Botanical Gardens for 1878. Two young plants were obtained from that establishment for Kew in 1879, and five years afterward one of them, a male, flowered and was figured in the *Botanical Magazine*, t. 6776. Shortly after this the second plant flowered and proved to be a female; the photograph reproduced on page 259 represents the latter in fruit here in February last. This plant is only four feet high, and it has a naked stem a foot long, by one and a half inches in diameter, with an onion-like base. The leaves are a yard long by two feet across; the pinnæ are smooth, pointed, dark green on both sides; the petiole channeled and covered with gray furfuraceous scales. The female spadix is slender, four feet long, with an elegant panicle, bearing pea-like fruits of a bright scarlet color. These remain on the plant several months, and as they are ornamental they add considerably to the beauty of the plant. Mr. Wendland, of Hanover, informs me that he has obtained several crops of perfect seeds from his plants by placing the male inflorescence upon the female plant when in flower. This Palm is as elegant as *Geonoma gracilis* and as sturdy as a Kentia. It deserves to take a prominent place among garden Palms,

* This is the *Hamamelis arborea* of Masters (*Gardeners' Chronicle*, 1881, 216, f. 38), which is referred by Hooker to *H. Japonica*.

Fig. 45.—Hamamelis Japonica.—See page 256.

its small size, free habit, elegance, good constitution, being all in its favor, while in the freedom with which it flowers and produces seed we have an exceptional character among dwarf Palms.

According to Hildebrandt it ultimately forms a tree six to eight feet high, and it grows on the mountains of Comoro at an elevation of about 4,000 feet.

Kew. *W. Watson.*

Foreign Correspondence.

London Letter.

A LONG and exceptionally trying winter has at last come to an end, and has been succeeded by weather which, for warmth and brightness, equals anything we usually experience here in midsummer. Nearly a fortnight of this excessive warmth has produced a change in the garden quite magical in its suddenness, for the gloomy appearance worn by every tree and shrub and herb a fortnight ago has given place to a wealth of healthy green leaves and gay flowers everywhere. Never were the orchards of the London market-gardeners so heavily laden with flowers. Plums, Cherries, Apples, Pears, in fact, all kinds of fruits, have flowered so abundantly, and in some cases set so well, that already the prophets have foretold a ruinously heavy harvest of fruits. The orchard is the most beautiful part of the garden now, far more beautiful, indeed, than any other part ever is. This leads one to again call the attention of garden-makers to the value of many of these fruit-trees in purely decorative gardening. Where such trees as the Almond, double Peach, double Cherry, and several of the Plums and Crabs are used the effect at this time of year is charming. But we need not stop at the double-flowered and rare species of these. There is no more beautiful tree than an old Apple heavily laden with its big bunches of pink blossoms; but who ever plants the Apple for the same purpose as the Lilac and Laburnum?

Daffodils of all kinds and in all sorts of places—on beds, in grass, by the side of the lake and in tufts among the collections of shrubs—have been very effective; as also have Hyacinths, Tulips, Anemones and Ornithogalums. English gardening has developed very considerably in the direction of out-of-door spring flowers. We have almost entirely left the ancient practice of attempting to grow flowers only in set beds in summer, and allowing the garden to lie undressed for the remainder of the year. There is abundant material with which, by a little management, a garden may be made interesting and beautiful from January to December. Bulbs play an important part in this as a matter of course, although we are by no means limited to them. We had the Spurge Laurels, the Witch Hazels, the yellow Jessamine, the beautiful Forsythias and many others long before the Primrose and the Snowdrop came. These were followed by Magnolias, Brooms, Rhododendrons, the Daffodils and such like heralds of spring. Now there is a great wealth of flower attractions everywhere, Lilacs, more Rhododendrons, the chaste Exochorda, Choisyas and Kalmias. Besides these, the out-of-door beds are gay with the flowers of *Milla biflora*, a charming plant for carpeting small beds such as surround specimen shrubs on lawns; Muscari, several species, most effective when used like the Milla; Irises, Primulas, especially *P. Japonica*, one of the most beautiful of all spring flowers, and as happy in an English garden as the common Primrose. Species of Tulipa are employed for furnishing small beds, and they are, at least, as pretty in color-effect as the most brilliant of the common kinds. The garden is the most pleasant place in the world at this time of year—that is, a well-furnished, nicely arranged garden, wherein the birds come to live and sing all day, and the plants have some new surprise for us almost every morning. Eternal spring might not be delightful, but spring after the frost and smoke and fog of last winter is most enjoyable. When the sun shines long and warm the plants in the houses soon wake up and rush into vigorous growth, so that houses vie with the garden in the open air in interest at the present time.

At Kew there are many noteworthy plants in flower, and perhaps I cannot do better, this week, than enumerate some of the most interesting.

Amorphophallus campanulatus seems to have excited some American horticulturists recently, and it excites most people here, too, when in flower, for the fœtid odor of its large bell-like inflorescence is most repulsive. There are a dozen or more flowers of it open in the stoves at Kew, as well as plants bearing only the large umbrella-shaped leaves. The largest examples have a spathe about nine inches long and a foot across, and colored green, mottled with gray, except about the mouth, where the color is lurid brown; the large misshapen spadix entirely fills the centre of the bell and is colored dark brown.

Phyllocactus.—This genus of Cactus has at last found favor with some of the leading English horticulturists, and there is therefore a prospect of its becoming as popular in gardens as it deserves to be. Cacti are neglected because they are not known. Many of them lack the qualities essential in a good garden-plant, but there are also many which possess them to the fullest extent. Phyllocactus is a case in point; no plants are more easily grown, none flower more freely, while in size, form and richness of the color of the flowers they are as grand as Tree Pæonies. At Kew there is a large collection of kinds, and many of them are in flower now. There are crimson, scarlet, rose, pink, white and cream-yellow varieties, some as large as the flower of the Victoria Water Lily, others only a little larger than the Epiphyllums. The French and German growers have raised many beautiful kinds of Phyllocactus, but one of the best—namely, J. T. Peacock, which is a giant and of the richest colors—was raised in England by the man after whom it is named.

Cineraria cruenta and C. lanata (aurita) are charming plants in the greenhouse at this time of year. They have all the beauty and elegance of the best of the Michaelmas Daisies, and they are as easily managed as the common Cinerarias. The first-named is the progenitor of all the big-flowered popular varieties, which find universal favor, while *C. lanata*, so far as I know, has never altered in character since it was first introduced from the Canary Islands, nearly a hundred years ago. Its flowers are each about as large as a shilling, white, with mauve tips, and they are very fragrant. I recommend these two plants to every one interested in beautiful-flowered plants for the cool greenhouse.

Aristolochia Goldieana is again in bloom. It is a most extraordinary plant, the size and form of the flower being quite sensational. It would be easy for a man to hide his head completely in the upper part of the flower, which, in shape, resembles an old-fashioned Dutchman's pipe. As in the case of many other gigantic and wonderful plants this Aristolochia is a native of tropical Africa, where, in the region of Old Calabar, it was first discovered and sent to England by a missionary some twenty years ago.

Rosa simplicifolia has apparently become quite established in a cool sunny greenhouse here, where there are two large bushes of it in the most perfect health and flowering freely. Although never likely to become a popular garden plant, yet it is a most interesting Rose, the character of its stems, its monophyllous leaves, suggesting some species of Berberis rather than a Rose, and its small, deep yellow flowers being altogether exceptional among Roses. Probably the hybridist may be able to make something of it, for in habit it is a perfect garden plant, and its leaves are elegant and pretty in color, being a glaucous, almost silvery green.

Solanum Wendlandii.—This plant is now magnificent. It is certainly one of the very finest of large stove climbers, its habit being to branch freely, and on the end of every branch there is produced, in spring, a large cymose raceme of rich lavender-blue flowers. It appears to prefer a sunny, moist, tropical house where, if possible, it should be planted in a bed of rich soil. It will continue to flower all summer.

Streptocarpus.—These plants have sprung into popularity with a bound, a result largely due to the foresight and skill of Messrs. J. Veitch and Sons, who have taken them in hand and crossed and recrossed all the best of the varieties originated at Kew. This year the seedlings at Chelsea are a great advance on anything previously seen, some of the flowers almost equaling Gloxinias in size and colors, while the foliage is much more convenient than it was in the first hybrids raised. There can be no question now of the merits of this Cape genus of *Gesneraceæ*. The progress already made with them is remarkable, and if Mr. Heal, Messrs. Veitch's clever hybridizer, can go on improving them at the present rate, we may soon see Streptocarpus rivaling, if not eclipsing, Gloxinia itself.

London. *W. Watson.*

Cultural Department.

Notes on Shrubs.

FLOWERING Cherries and the flowering Crab-apples have blossomed unusually well in the vicinity of Boston this season, the Apples being particularly noticeable for the fullness of their bloom.

One of the very earliest of Cherries to blossom was the Chinese *Prunus tomentosa*, the seed of which was received at the Arboretum from the mountains about Pekin, China. It is a bushy little plant, which appears to be at its full size when from six to eight feet in height and with fully as great diameter. Its earliest blossoms this season began to open about the 20th of April, and at the same time the leaves were well advanced. As the flowers are sessile, or nearly so, and are partly concealed by the growing foliage, they are not so graceful or showy as those of some other species. Its fruit, however, gives

Fig 46.—Ravenea Hildebrandtii in Fruit. See page 256.

promise of usefulness, as the medium-sized, light red-colored cherries which it bears are of quite a pleasant flavor even in this wild state. The stone is rather large, but by cultivation and selection the size of the cherries could be increased, and small-seeded farms adopted and propagated by division. The extremely early-flowering habit has usually prevented a large crop of the fruit here on account of cold weather and frosts which occur at the time; but, otherwise, the plant seems perfectly hardy in a winter like our past one. Last year the plants appeared somewhat injured, although the winter was not considered nearly so severe and the cold was not so great. Apparently, the injury then was due to other causes besides cold alone.

There is so much confusion regarding the nomenclature of the ornamental Japanese Cherries which have been introduced into cultivation that it is almost impossible to know exactly what kind or form will be received when ordering from different nurserymen. There are two distinct types of these plants, and they appear to pass interchangeably under a dozen different names. Both are often considered by botanists as forms of the Chinese and Japanese *Prunus Pseudo-Cerasus*. Whatever their origin may have been, they are certainly quite distinct from a horticultural point of view. The earliest-flowering of the two opened its first flowers this season in the last days of April and first week in May, before any of the leaves appeared. These flowers are large and semi-double; the buds, or outer petals, are deep pink or red, and the opened flower pinkish white within, which soon turns to a distinct rose-color, that deepens with the age and fading of the flowers. The leaves come out when the blossoms are fading. They are of a very dark green color, tomentose above and beneath, the pubescence being very dense on the under side. This is the plant which, besides many other names, is often sold as *Prunus Watereri*. It is the most showy and ornamental of those introduced here.

The other form of these Japanese Cherries does not begin to open its blossoms until at least ten days after the first form, and when the latter one is in full bloom the blossoms of the early one have faded. The flowers of the late one are pure pearly white, with rarely the faintest suggestion of pink, but there is a variation with the outer petals distinctly rosy-colored. As the flowers fade they do not change to the dark rosy color of the other. The leaves are light green, and they are already large and well developed before the blossoms appear. They differ markedly from the other form in being perfectly smooth or glabrous on both surfaces. This form is not nearly so floriferous as the early-blooming kind, and, although very beautiful, its flowers are much hidden by the foliage. Among other names this is often sold as *Prunus Sieboldi flore albo pleno*, or *P. Sieboldi flore roseo pleno*, according as the blossoms are pure white or have the outer petals of a pink or red color. It is apparently the *Prunus serrulata* of Lindley.

These double-flowering Chinese or Japanese Cherries should not be planted with the expectation that they will become large trees, for, although they have the single-stemmed tree form, they do not attain the height of many of our native plants which are classed as shrubs.

Arnold Arboretum. *J. G. Jack.*

The Hardiness of Japanese Bamboos.

THE Bamboos, the noblest of all the grasses, have not only the merit of utility, but the growth of many varieties is characterized by such grace and distinction that they are among the handsomest ornaments of gardens and plantations. Lately much attention has been given to some of the Japanese varieties, among which may be found widely distinct habits, ranging in height from three feet to forty feet, and with foliage varying both in breadth and color. In a small state many of these varieties are useful, grown in jars, for in-door decoration—a use to which they are much put by the Japanese. Florists will find these useful additions to their stock of decorative plants, as they are not only light and graceful in effect, but they will help to break the monotony of the Palms. But their beauty is better shown when grown in large masses in the open air; where rightly placed, they have capabilities of striking effects in the landscape. *Bambusa Metake* has been long known in gardens and is of undoubted hardiness, but there are numerous Japanese varieties which are now obtainable, and many of them will be of great value if they prove entirely hardy. Most of these are said to come from the warmer parts of Japan, but I have been much encouraged, in testing a small selection of varieties last winter, to believe that many of them are hardy in this latitude, and require scarcely any protection. The varieties tested were planted early last spring, and, while apparently well established, they made no great vertical growth. They were in rather stiff loam, where no stagnant water could remain at the roots. They remained during the winter without any protection to the stems and with no mulch over the roots. Six of the seven varieties exposed passed the ordeal safely and are now making vigorous growth. There was, however, an apparent difference in their resistance to severe weather, but this may have been due to less-matured growths. The past winter was not extremely cold, the thermometer only once dropping to zero, but was a fairly average one as to temperature and moisture. They having lived through this without the slightest protection, there seems no reason to think that they will not pass safely through an exceptionally severe winter if the roots are well protected by mulching. It might also be well to provide wind-breaks, though the foliage of most of the varieties could not probably be preserved during an ordinary winter under any protection in this climate. Such varieties as *B. Ragamowski* may be an exception in this regard, since they have hard, firm leaves which would be retained if protected from scorching. *B. Simoni* also has persistent foliage. In detail, the varieties tested are given in the order of apparent hardiness.

B. Simoni, leaves quite persistent, and plant untouched. *B. viridi-glaucescens* and *B. aurea* lost their leaves, but the stems were untouched. *B. Ragamowski* had its leaves scorched. *B. (Arundinaria) quilioi* lost its leaves, and its stems were slightly touched. *B. (Phyllostachys) nigra* (Korochiko of Japan), top killed, but now pushing from the roots. This black-stemmed variety is said to attain a height of thirty feet, which would indicate more vigor than it has shown with me.

B. angulata (variety with knotty joints) was entirely broken up, root and branch, by the frost. *B. Castilloni* (Kimmeichiku of the Japanese) was grown in the house, but is apparently as vigorous as the hardiest ones. Bamboos do not often show their distinct characteristics before the second year, and should be planted in permanent quarters. They form thickets by pushing out horizontal short-jointed stems in every direction. These emit roots, and break at every joint, so that a well-established plant soon becomes the centre of a large clump.

Of course, as these plants grow tall, conditions may arise which would prevent their being hardy in this latitude. For instance, an exceptional winter might cut the top growth severely if not matured, but the root-action is so strong that there seems little doubt that the damage would be confined to the tops even in the worst seasons.

Elizabeth, N. J. *J. N. Gerard.*

Wild Flowers around St. Louis.

THE variety of wild flowers in this immediate section is interesting though much smaller than in New England. The species are repeated more than in the east, due to the sameness of the soil and situations. *Phlox pilosa*, now in flower, is a handsome species, hardly excelled by any other of the perennial class in the richness and variety of shades of its flowers, which vary from a pinkish purple to a rosy red, and occasionally almost white. It grows usually in tufts from ten to fifteen inches high. It transplants better than the other species, for, by taking plenty of soil with its roots, it may be moved when in full bloom without wilting at all. It will thrive in any ordinary garden soil. *Oxalis violacea*, though not very abundant, is common here, and the flower is rich pinkish purple or violet-tinged. It is not very lavish in blooming, and one seldom sees more than two at one time on a stem, and I have never noticed more than one stem to a plant. It grows in thinly shaded places. The Dwarf Larkspur (*Delphinium tricorne*) has been in flower here for more than a week. It is, I believe, the first of the perennial Larkspurs to bloom. Though quite common in thin woodlands it seems to be nowhere abundant. It seldom grows over a foot high, bearing at the summit of its almost naked stem a flat spike of six to ten bluish purple or sometimes white flowers, which are a little more than an inch wide and alternate on either side of the radix of the spike. It bears transplanting well, and when in flower is an attractive plant. The spikes are borne on ample stems for cutting, and should be useful in making bouquets.

The little white-flowered variety of the Blue-eyed Grass (*Sisyrinchium Bermudianum*, var. *albidum?*) is common here in some places. It grows about a foot high, and bears in a cluster near the summit several pretty white flowers, with a yellowish centre, half an inch wide. Its stems are ample for cutting, and it is certainly a plant worth cultivating.

If there is any one plant that seems to thrive here better than the average it is the May Apple or Mandrake (*Podophyl-*

lum peltatum). It can be found in almost any thinly shaded location that is not wet, and makes a very strong and healthy growth. Unlike most plants, it seems to be avoided by cattle and other animals, for it is in the pastures and fallow fields that it thrives best. In pastures, where the cattle had eaten off nearly every green thing, and where hogs had dug over a good portion of the ground around them, I have seen large thrifty patches of this plant untouched.

There are few of our native perennials more attractive in their natural homes than the Spiderwort (*Tradescantia Virginica*), which is quite common here. It is smaller than in cultivation, and, though it is a valuable plant in our gardens, it seems to lack the charm that it has in the woods. Its rich blue petals, golden yellow stamens, and dark green sepals and leaves are a pleasing combination of color. The ten to twenty flowers which are borne on a stem do not open at once, but come in long succession, and prolong the flowering season. *Cynthia Virginica* is also common here, and is just coming into flower. It selects the shade in this region, though when cultivated in New England it seems to prefer the full sunlight.

Botanical Garden, St. Louis, Mo. *F. H. H.*

Succulents for Bedding.

IN certain locations a bed filled with plants of a succulent character may be used with good effect, notwithstanding the stiff and formal habit of growth common to so many plants of this class. But, while of formal appearance, there is yet great variety of form to be had in the various genera usually considered under this heading, and, by a proper admixture of types, a very pleasing result may be attained. Among the plants so used are some of the Euphorbias. *E. Canariensis*, *E. grandidens*, and *E. hystrix* are all odd-looking plants, with leafless, or comparatively leafless, stems that are stiffly branched like some of the Cereus. The first two species are unarmed, while *E. hystrix* is ornamented with long spines. It should be remembered, however, that all of the Euphorbias are more or less poisonous, and consequently some care should be taken to avoid getting any of the sap from these plants into a scratch or sore on the hands.

Almost any of the Cereus also may be used with good effect in the succulent bed. Moderate-sized specimens of *C. giganteus*, *C. flagelliformis*, *C. serpentinus* and others are recommended. The Agaves, of course, should be well represented. The familiar *A. Americana* and its variegated varieties are all desirable plants for this purpose, the latter especially so. *A. filifera* is another good species, and has the advantage of being quite a moderate grower. The leaves are six inches to one foot in length, and from one to one and a half inches in width, gradually tapering to the usual terminal spine; they are dark green in color, the edges being gray and more or less ornamented with gray threads, from which it receives its specific name. *A. schidigera* is another handsome species and of somewhat similar character to the last-named. *A. appalanta* is a striking species, and has rather broad leaves of bluish green color, edged with brown and terminated with a long brown spine. *A. horrida* is a distinct type with numerous bright green leaves with gray borders; both the margins and tips of the leaves are armed with sharp spines. Several varieties of this species have been named and distributed, and, in common with the whole family of Agaves, are well adapted for out-door use in summer.

For filling in and carpeting among the larger plants some small-growing species are necessary, it being essential to the appearance of succulent beds that they be filled moderately close; the slow-growing character of most of these plants is well known, and for this purpose there is nothing superior to the Cotyledons, or Echeverias, as many of them were once known. Of the Cotyledons there are several that deserve special mention, among them being *C. secunda glauca*, *C. Mexicana* and *C. Peacockii*. All of these are small growers and of compact rosulate form, and are therefore among the most useful. For variety, *C. agavoides*, which grows somewhat like a small Agave, and *C. metallica*, with leaves of a peculiar combination of purplish metallic tints, and about six inches in length and also in breadth, may be considered, while for distinct character and pleasing effect *C. orbiculata* is one of the best. The latter is of moderate growth, and has nearly round fleshy leaves that are thickly covered with white farinose powder. *Cotyledon lurida* and *C. Pachyphytum* are also interesting species, the latter being formerly known as *Pachyphytum bracteosum*.

Kleinia repens is an old plant that may also be used effectively in the class of bedding referred to. It has thick fleshy leaves of a bluish green color, covered with a glaucous bloom, and the plant is of dwarf-branching habit. As an edging some of the Houseleeks are useful, the tiny *Sempervivum arænoideum*, with its web-covered rosettes of leaves, being a pretty variety for this purpose, as is also *S. calcareum* and *S. fimbriatum*.

Holmesburg, Pa. *W. H. Taplin.*

Points of Merit in Asparagus.

THERE has been a good deal of discussion as to whether this vegetable should be blanched or green, and some, claiming that blanched shoots only are really fit to eat, refer for proof to the long, tender and delicious shoots served up in France, where only blanched Asparagus is used. Others say the brown or blanched portion is always tough, woody, and flavorless, and only the green portion should be used; that we must never cut or break below the surface. We think a little consideration of how the plant grows will disclose the cause of this difference of opinion. The young shoots of Asparagus expand and elongate very fast at first, but with decreasing rapidity. The hardening or development of woody fibre commences at the base of the shoot and extends upward, slowly at first, but with gradually increasing rapidity until it overtakes the elongating point about the time it breaks into branches, and the entire shoot becomes hard and inedible.

An Asparagus-shoot, or bud before it becomes a shoot, is woody at the point of juncture with the collar from the first, so that if we cut it at the collar when it is ever so small the lower part will be woody and tough, and we shall have to cut it at a proportionately greater distance from the collar, as the shoot elongates, to avoid this woody portion; so that, if we plant shallow and cut much below the surface, we shall always have woody butts, and to avoid them we cut above ground and have green and tender shoots. If, however, we plant deeply (or better still, follow the French method and plant shallow and thin, during the cutting season banking up over the plants with light, friable soil, or other suitable blanching material) we may have long, perfectly blanched shoots, but far enough from the collar to insure tender blanched asparagus without woody butts. The secret is, cut your shoots at a distance from the roots proportionate to their age.—*Professor W. W. Tracy, before the Michigan Horticultural Society.*

Vegetable Garden Notes.

AMATEUR gardeners often wait for what they call a favorable season to transplant vegetables. After a hard summer rain they hasten to get plants and set them in the muddy soil. This is bad practice, as men of experience know. Plants should not be set immediately after a heavy rain, while the soil is soaking wet, for the packed earth hardens in the sun and bakes into a dry cake about the roots of the plants. If planted just before a rain, they would have taken hold at once. But we cannot select a day before the rain with any certainty. It is safer always to transplant when the soil is moderately dry. Have the plants in a bucket of water, to keep them fresh, make holes large enough to contain the roots without crowding, let an assistant fill the holes with water, put in the plant, then fill the hole with earth, press the soil closely about the roots and cover the surface—that is, mulch the plants with dry earth. In this way the ground will not bake, and the growth of the plants will be unchecked. Tomatoes and Sweet-potatoes particularly need this treatment.

I gathered a beautiful crop of little pickling onions on May 21st. These were sown in February and are now fully ripe, and the ground is free for other crops. Of course, this is earlier than they can be had at the north, but I mention it to note the fact that even at the north a crop of these little Queen Onions can be grown in time to use the ground for late Cabbage, Salsify, Beets or Carrots. Sown at the same time with these the Giant Rocca Onion is still growing, and will probably keep on growing all summer. For family use we prefer the Queen Onion for all purposes. Those grown early will not keep, but we can sow them here in September and let them remain for use all winter where they grow. At the north this Onion will mature a crop if sown early in August.

We are much pleased with the Parker Earle Strawberry from one season's trial. Hoffman is still here the earliest good berry. Cloud is nearly as early, but is small, soft and worthless. Bubach No. 5 lacks productiveness, but is a fine spring sort. Jessie is early, large and good; our market-growers are planting it largely. We have a promising number of seedlings at the station, but, of course, nothing will be done with any of them until tested at other stations.

A Grape called Winchell was sent to us this year with the statement that it is the same Grape that has been sent out as "Green Mountain." We planted it alongside the Green Mountain received last year. So far it differs widely in the appearance of its foliage from the Green Mountain.

Experiment Station, Raleigh, N. C. *W. F. Massey.*

Syringa pubescens, of which a figure was published in these columns (vol. i., page 415), is one of those plants which improve with age. The large plants in the neighborhood of Boston, raised in the Arnold Arboretum from seed sent by Dr. Bretschneider from Pekin, have flowered better this year than ever before, and have proved that this species is one of the most beautiful Lilacs in cultivation. The individual flowers are not large, and the clusters are smaller than those of the other species; they are produced, however, in the greatest profusion, and quite cover the branches. The flowers are at first a delicate rose-color, but, before fading, become almost white; they are deliciously fragrant. *Syringa pubescens*, which must not be confounded with the plant sometimes cultivated in European gardens under that name, but which is really the *Syringa villosa* of Northern China, and probably identical with the Himalayan *S. Emodi*, is perfectly hardy even in our most severe climates, and nurserymen will do well for themselves and for the public by placing it within reach of all planters of hardy, handsome-flowered shrubs.

An Abundant Rust.—The well-known and destructive orange rust of the Blackberry (*Cæoma nitens*, Schw.) is very abundant this season. Specimens have been received at the station from various parts of the state, and during a recent trip through the south it was observed in many places. It is a showy rust, and the fungus not infrequently gave a decided orange color to the infested areas. This rust is one of those that penetrate all portions of the plant and live within the tissues from year to year. When new shoots and leaves form, it quickly spreads from the old parts and shows itself in countless yellow spores, usually in large blotches upon the under side of the leaves. On account of its perennial nature, it is difficult to eradicate this pest by spraying, and the best method is to remove the diseased plants, roots and all, and burn them. As the rust spreads from plant to plant by means of the spores, spraying, if done at the right time, would tend to prevent the spread of the rust.

N. J. Experiment Station. *Byron D. Halsted.*

Correspondence.

Bermuda in May.

To the Editor of Garden and Forest:

Sir,—It is not surprising that the genial climate of Bermuda should attract so many winter visitors from our northern states. A sea-voyage of less than three days, and one which a fast steamer might easily make within forty-eight hours, suffices to bring them to shores that are green the year through, and yet to an air so equable that the fervors of the summer sun are rarely oppressive or enervating, because the heat is so constantly tempered by breezes from the sea. The change in the political and social atmosphere is quite as striking, for the American citizen will suddenly find himself in a loyal English colony where even the negroes—perhaps the most active and intelligent specimens of their race to be found in all the world—speak with a perfect English accent, where fleet or fortress is forever in sight to manifest the imperial power of Britain, and where a large proportion of the men one meets on the street wear the uniform of her army or navy.

The great mass of those who flee to Bermuda to escape the rigors of winter return in April, so that the impressions one receives from a flying visit in late May may be worth recording. The islands are not at their best until June, it is said, and, perhaps, the time is not far away when this will be a favorite haunt for the summer tourist from New York, who could hardly find elsewhere a week or a fortnight of rest and change so perfect and so convenient as that furnished by a trip over cool seas to these breezy islands.

One need not expect any touch of the sublime in the landscapes here, for it would not be possible to crowd many natural objects which inspire awe by their vastness or sublimity within a long and narrow chain of islands containing altogether an area of some twenty square miles. But the land, what there is of it, is pleasantly diversified in surface, rising at one point to an altitude of some 200 feet; and the ever-present sea of itself suffices to insure every wide prospect against the charge of being tame or commonplace. One charm of the sea, by the way, is its marvelous and indescribable color, for the water over these coral reefs outrivals the azure of the sky in the richness and depth of its blue. There are occasional inland views where, in happy valleys, the sea is shut out of sight by encircling hills, and here, at times, one is reminded of New England, with roads winding along Pine-woods with an undergrowth of Ferns. No Pines are here, it is true, but the Bermuda Cedar, at a little distance, constantly suggests the Pine, and on a nearer view it shows so close a relation to our common Red Cedar that there is nothing strange or unfamiliar in its presence, although the species is confined mainly to these islands. When Juan Bermudez, nearly 400 years ago, was feeling his way along the treacherous reefs which surround them, he saw the islands covered with forests of these trees, which then attained to stately proportions. These forests have been cut and re-cut since, and yet they form the most conspicuous growth upon the island to-day; indeed, the larger proportion of the surface seems forest-clad, for wherever the land is left to itself the Cedar "comes in." It would be naturally supposed from the shiploads of onions and potatoes that reach our markets from Bermuda in the spring that every rod of the scanty territory was under plow or spade, but the visitor's first surprise, and one from which he can hardly recover during a brief sojourn, is, that he rarely finds these articles of export growing in large fields—indeed, an acre would pass for a considerable plantation here—but generally in little pockets a rod or so across, where the red soil is deep enough to furnish root-room for the plants, while all about them the rock is thinly covered or thrusts its massive shoulders quite above the ground.

Next to the forests, clothing the hills which slope toward the shore, one who for the first time sails in sight of them through the tortuous channel which leads to Hamilton is struck with the white houses which nestle in their foliage. These are all built of the light friable limestone of the island, which is so soft that it can be readily sawed into blocks. Even the roofs are made of thin stone plates, and the whole building is whitewashed till it glitters. In spite of this shining color the houses have no staring or obtrusive effect, but being substantial and low they only serve to deepen the color of the green about them, making the landscape more cheerful and investing it with a more home-like and human interest.

Once on the land, the roads are among the first objects to invite attention. Very few level acres can be found on the islands, but these old highways adjust themselves most graciously to the contour of the hills and the curving of the shores, winding in and out apparently without purpose or direction. But in so small an area there is little need of railway directness, and one is glad to lose a little time in travel where there is so much of it in a day. At every turn there is a changing prospect, a new arrangement of sea and shore, of cliff and dell, of Lily-fields and Oleander-hedges. Broken pieces of the soft stone spread upon the road-bed at once pack into a smooth surface over which a wheel delights to roll, and its gray tone blends most happily with the prevailing colors of the landscape. And then the fences, which generally are objects whose ugliness needs some excuse, are here a positive ornament. They are walls constructed of the same sawed-stone blocks and cement which are used in all the island architecture, and they would stand for a century here, where there is no frost to heave them, unless they should chance to be crowded over by the roots of some pushing tree. They seem to have been built along the roads generations ago when slave-labor was abundant, standing everywhere square and firm—now as parapets along the brow of some cliff whose base is beaten by the sea, and again as retaining walls against the face of some cutting—usually bare, gray and honey-combed with age, but often draped and garlanded with Maurandya and other vines, or overhung by huge masses of Cactus. They are always picturesque, and, like all solid, hoary and weather-beaten structures, are agreeably suggestive of antiquity. These, then, are the leading features of the landscape which are permanent: a narrow stretch of land, with a rolling and often a rugged surface; bold shores surrounded by a sea of an unspeakable blue; open fields with scant, coarse grass, which leaves them rather brown than green; forests of Cedar with blue-gray foliage; snow-white cottages and a web of roads in a close net-work, uniting with each other at every conceivable curve and angle. Over all hangs a translucent atmosphere which dims the distance, mellows the outline of objects nearer by, and softens away the glare of every intense color. Very beautiful and impressive are the shifting combinations of these simple elements under such a sky.

The efforts of the Bermudians in the past to improve the scenery by planting do not seem to have been as successful as one could wish. So many treasures for gardens in such a climate could be found by searching that one marvels at the scanty catalogue of materials used in the most elaborate places, and yet the gardens are by no means devoid of interest or beauty. Just now the most conspicuous of plants is the Oleander, which grows and spreads with such persistence that many of the islanders count it a nuisance. To a stranger, however, there are few more attractive objects than the great mass which ultimately forms from a single parent stem in rich soil. These are often twenty feet high, with branches arching to the ground in a circle whose diameter more than equals the height—green mounds starred all over with bright flowers which range from pure white through shades of pink to almost crimson in some cases. All that is needed to start an Oleander-hedge is to place a row of cuttings in the ground, and one often sees a broad belt of these plants extending entirely around the boundary of some estate. The Chinese Hibiscus is, perhaps, next to the Oleander in abundance, and it seems equally luxuriant. In many places these plants are sheared into formal hedges, and the great flowers open on the smooth face of this verdurous wall as freely as on the plants which are left to develop into fair-sized trees. *Tecoma Capensis* is another plant which is largely used in hedges, and, just now, it is brilliant with orange-colored flowers, while *T. stans*, one of the most beautiful of yellow flowering shrubs or small trees, is at the height of its bloom. The Tamarisk, here as elsewhere, shows its sturdiness against the salt-laden gales of the sea-coast, and has been planted very largely and with good judgment in exposed places on the shore. The gorgeous blooms of *Poinciana regia* had not yet appeared, but its relative, *P. pulcherrima*, was growing and blooming everywhere. Occasionally fine masses of Bamboo are seen, and these, with the native Palmetto (*Sabal Blackburniana*), the ever-present Banana, and some of the hardier Palms, are the most distinctly tropical features of the scenery, although the Poinsettias, Pomegranates, Bignonias (especially *B. pentaphylla*, known here as the White Cedar), the so-called Sand-plant, *Erythrina speciosa*, with brilliant scarlet flowers on bare branches, and large specimens of the India Rubber-tree wear a strange look to northern eyes. Of course, this is not meant to serve as a complete list of the garden plants of the island, but only to recall those which were sufficiently conspicuous at this season to impress a casual visitor. Space would fail to mention the striking individual plants, like the two fine "Gru-Gru" Palms (*Astrocaryum aureum*) at Mount Langton, but Roses ought not to be omitted, for, although our hardier kinds do not flourish here, those with some blood of the Teas or other tender strains, like Lamarque, for example, were bearing fine flowers in profusion. In the Governor's grounds a superb specimen of *Rosa bracteata* showed that the soil and climate were well adapted to this beautiful species.

How readily some plants will become naturalized when they find favorable conditions is shown by the case of one of the Jessamines (*J. gracile*) which was brought to the islands in 1840. It soon escaped from cultivation, and now it is clambering over the rocks and making an almost impenetrable tangle in the woods of a broken region near the famous Walsingham tract. It is a delightful vine with glossy and fragrant white flowers, and it seems strange that more general use has not been made or it. It would make a charming addition to the landscape if allowed to clamber over the walls along the highways. Occasionally one sees a European Elder, which grows here with great vigor, and is always a beautiful tree. The islanders seem to have caught the European habit of setting it close to the sides of their houses, and it shows to great advantage against their walls. This masking of the house-foundations with shrubbery, however, is no more generally practiced than it is in the United States, but these stone houses would seem to offer excellent opportunities for making such connections with the earth. By one cottage along the road which winds about the north shore stands a pair of Agaves close to the front wall, one on either side of the entrance of a narrow loggia, and the sharp stiff leaves against the white stone produce an effect that no one who drives by them will forget.

All the world knows how extensively the bulbs of the great Easter Lily are cultivated here, and the more beautiful old Ascension Lily, *L. candidum*, flourishes equally well, while Hippeastrums (Amaryllis) and Freesias grow like weeds. At many seasons the fields are brighter than the gardens, but Bermuda is a land of flowers at all times. Our northern states in late May are so attractive that one hesitates about leaving them even for a short absence. But when a few hours can land us amid the vegetation of the tropics, under a new sky and encircled by a strange sea, the change will prove a pleasing one, and the return will bring a keener appreciation of the rare loveliness of our northern spring.

New York. *S.*

Dionæa muscipula as a Window-plant.

To the Editor of GARDEN AND FOREST:

Sir,—One of your correspondents has recently written of the Rattlesnake Plantain as a window-plant, and perhaps some experience with the little Venus' Fly-trap (*Dionæa muscipula*), also as a window-plant, may prove of interest. Early last March five melancholy little plants were given to me by a friend to whom they had been sent from their native haunt near Wilmington, North Carolina. I planted them in a deep pot, which I set in a dish of water in a sunny window. They drooped for a while, but soon became acclimated, and began to send up fresh leaves and long straggling flower-stalks amid a flourishing crop of grass and Chickweed. Beyond giving them plenty of water, little attention has been paid to them, and now my Dionæas are in fine condition, blooming well and exercising their insect-catching propensities to the best of their ability. It was hard to understand how the apparently thin, delicate, little leaves could catch flies nearly as large as themselves, but they certainly do hold them with a murderous grasp. Once I tried to help the plants, and after some trouble caught an unusually large fly, and with a pair of forceps held the tempting morsel between the two valves of a leaf. They very promptly closed on the poor fly, who struggled in vain to escape. Since then my plants have been a daily source of interest, though I let them pursue their insectivorous habits without further help from me. Their leaves are mostly over three inches long, including the curious blade-like stem; the flower-stalks are eight to ten inches tall, and bear at the apex a small cluster of buds and flowers. The latter are about an inch across when fully expanded, the five white petals almost transparent and very delicately veined, and the fifteen fluffy little anthers are light yellow on slender white filaments.

It is a pretty little plant, and certainly a most original and amusing one to watch.

New York City. *Anna Murray Vail.*

Recent Publications.

The New Potato Culture, by Elbert S. Carman. The Rural Publishing Company, New York.

For a dozen years or more Mr. Carman has been making experiments in hybridizing and cultivating potatoes, and in this volume he has collected what he considers the most important results which seem to be demonstrated by his tests. What he claims primarily is, that potatoes should be planted in a trench—say ten inches deep and as many wide. So far as can be gathered from a rather diffuse explanation of the method, the practice advocated is to loosen the bottom of this trench, fill in some five inches of soil, and on this mellow bed to drop the seed-pieces, say a foot apart, and then fill in the remainder of the soil and give level culture. It is claimed that the trenches conserve moisture, which is essential to a good crop. The deep planting also encourages the formation of tubers in two or three planes or tiers, one over the other, so as practically to increase the area of the field by growing one crop above another. The plan also offers some convenience for the application of fertilizers. No doubt, in some soils the trench system would pay well, although it may be questioned whether any revolution in the general method of cultivating the potato is at hand, as the title of this book would seem to indicate.

Many interesting trials with various so-called chemical fertilizers are here recorded—trials made to ascertain the proper proportion of the various elements of plant-food, and the best time and place for their application. All such experiments are indecisive, on account of the small area occupied in the test, the varying conditions of different seasons, and the short time during which they have been conducted. Still they afford valuable hints to the thoughtful cultivator, and they ought to encourage additional experiments on a larger scale in many different soils and climates. Many instructive directions for producing new seedling varieties are given, as well as for the preservation of potatoes during winter, the amount of "seed" to be used, for improving varieties, for mulching, and so on.

The book lacks methodical and systematic arrangement, but a very complete index goes far toward correcting this fault, and Mr. Carman's careful and long-continued studies deserve grateful recognition.

Notes.

It is claimed that Castor-beans grown in California average three times the size of those grown in the east.

The Rhododendrons in the Central Park have never been finer than this year. They were at their best about the 25th of May, when the glen at the north end of the Park was a beautiful sight.

A Washington correspondent writes of the beauty of some fine specimens of *Cladrastis lutea*, or Yellow-wood trees, in the Capitol Park. They have a symmetrical form, with clean bark, smooth twigs and rich green foliage, and are now in full bloom, bearing graceful racemes of snowy pea-shaped blossoms, which have a delicate perfume.

The Horticultural Society at Elizabeth, New Jersey, recently offered a package of China Aster seeds to any girl or boy who would apply for them and agree to grow and enter them for competition at the exhibition to be given in September. Over 500 packages have been distributed. This incident contains a practical suggestion for individuals and societies.

A long-continued blooming season is certainly a great recommendation for any plant used to ornament public parks. None is more remarkable in this respect than the Moss-pink. Early in April its flowers began to unfold in the Central Park; by the 20th of the month they were in full bloom, and on the 25th of May the wide mats they form had not yet wholly lost their rosy color.

A new species of Lilac, discovered in Thibet and western China by Prince Henry of Orleans and his companion, Monsieur Bonvalot, is described by Bureau and Franchet under the name of *Syringa tomentilla*. Its affinities are with *Syringa pubescens*, from which it differs in its longer and narrower leaves, pubescent especially on the lower surface, and by the nearly entire calyx.

The most conspicuous blossoms in the Central Park, after the Forsythias, the Lilacs, the Wistarias, the Judas-trees and the Dogwoods had had their day, were those of the many species of Spiræa which, in every direction, spread their close white clusters. Fortunately the park authorities do not think it needful to "trim" shrubs like these, and the wisdom of leaving them to their own graceful inclinations must have been apparent to every one who noticed how beautifully their long branches drooped toward the grass, uniting the verdure of the ground with that of the shrubberies above.

According to the *Brick, Tile and Potteries Journal* successful experiments have been made at the Technological Institute, in Charlottenburg, Prussia, with regard to the use of sawdust as a building material. Mixed with certain refuse mineral products the sawdust is compressed into excellent bricks, which are very light, are impervious to moisture, and are uninflammable even when brought into direct contact with flame. The same journal says that a French writer recommends the use of sawdust instead of hair for mixing with mortar, the special combination named being two parts of lime, five of sand, one of cement and two of sawdust.

A correspondent writes from Manchester, Massachusetts, for information as to the best methods of protecting apples against various insects. Different remedies are needed for different attacks, but just now it is good general practice to spray the trees with the Bordeaux Mixture, containing in addition Paris Green at the rate of one pound to 200 gallons of the mixture. This will prove useful against the Apple-scab as well as against insects. Bulletin Number 13, just published by the Massachusetts Agricultural College Experiment Station, contains an admirable summary of practical directions for the preparation and use of remedies against insects and fungi injurious to fruit.

A circular recently issued by the Forestry Commission of New Hampshire might well be imitated by similar bodies in other states. It invites the people to give facts and suggestions regarding fires in the forest; to note the places in mountain regions where new roads and paths are needed; to record the effects of denudation on the volume of water in the rivers and streams; to point out views of unusual beauty or natural objects of scientific or picturesque interest, access to which has not yet been rendered easy; and to report upon the value of timber-lands as investments, as well as upon any new or unusual uses to which timber or other forest-products are being put by manufacturers. If the people of the state generally respond to these invitations, a mass of very interesting and ultimately beneficial information will unquestionably be collected.

In his "Common-Place Book" Southey quotes from Pierre Huet, a French critic of the seventeenth century, a passage which proves that the garden roller was not then, out of England at least, a familiar implement. Writing of the garden of Lord Paulet, at Hinton, St. George's, Huet says: "It is very different from the common style of English gardens. These are usually walks of sand, made perfectly level by rolling them with a stone cylinder, through the axis of which a lever of iron is passed whose ends, being brought forward and united together in form of a triangle, serve to move it backwards or forwards, and between the walks are smooth grass-plots, covered with the greenest turf, without any other ornament." The garden of Lord Paulet, we are then told, "is a meadow divided into several compartments of brick-work which are filled with flowers."

A writer in the *Sun*, of this city, recently remarked, that in spite of the attitude taken by certain prominent men toward the multiplication of railroads in the Adirondacks, "the feeling against them is intense and almost warlike in the hearts of thousands who have seen the woods before and since railroad building began there. 'In 1884,' said one New Yorker, 'I entered the woods below Malone, and fished and hunted through a great reach of as absolutely wild forest as I ever saw. Fish and deer were plenty, and wild nature was luxuriant. Three years later I went there again. The whole area where I had hunted before was waste and bare—all burned over and desolate. A great sand desert was one feature of the country, and the rest was a litter of blackened stumps. Miles of the forest had been irrevocably destroyed, for not even time can replace the original woods. That was what followed the building of one little railroad in the Adirondacks.'"

No single plant does more to ornament the Central Park than the Wistaria. On the many arbors and shelters over which it is trained its spring display of blossoms is enchanting, while after these have fallen its thick, yet graceful, foliage forms an impenetrable canopy of shade without producing too heavy an effect. But if less useful, it is perhaps still more beautiful where it has been planted close to isolated trees and allowed to twine itself among their branches. When the tree is a conifer the contrast of its stiff and dusky green with the paler green and the lilac blossoms of the creeper is perhaps a little too pronounced. But on deciduous trees the Wistaria often combines with its support in a manner as harmonious as it is striking. A most beautiful instance of such a combination could be observed a week or two ago on the East Drive, near the Seventy-second Street entrance, where a Linden of moderate size and symmetrical growth was completely covered with Wistaria, yet so loosely draped that its development had not been hindered and the character of its own leafage could still be seen. From its lowest branches to its topmost twigs it was thickly hung with the fragrant lilac clusters, so that it wore the aspect of a gigantic bouquet composed of flowers and of two kinds of foliage; and this aspect it preserved for many consecutive days. In another part of the park the same plant displayed itself in a different, but almost equally charming, way. Here an arbor runs at right angles to the drive, opening directly upon it between closely flanking trees and shrubs. The Wistaria that had been planted to cover this arbor had spread over the trees as well, so that one saw an archway, apparently composed entirely of flowers, supported by masses of green, over which the blossoms were more loosely spread.

Catalogues Received.

Dr. L. P. Britt, 37 College Place, New York, N. Y.; Britt's Automatic Safety Bit.—Wilfred A. Brotherton, Rochester, Mich.; Catalogue of Michigan Wild Flowers for Parks, Gardens, Bogs, etc. List of Plants for Carp Ponds. Also, Wholesale Trade List of Michigan Wild Flowers, Trees, Shrubs and Ferns.—Dammann & Co., San Giovanni a Teduccio, near Naples, Italy; Wholesale Catalogue of Bulbs, Roots and Orchids.—F. W. Devoe & Co., cor. Fulton and William Sts., New York, N. Y.; Catalogue of Artists' Materials.—Wm. Baylor Hartland, 24 Patrick St., Cork, Ireland; Daffodils for the Trade.—L'Horticulture Internationale, Brussels, Belgium; New Orchids, Established Exotic Orchids, Nepenthes, Ornamental Plants for Conservatories and Winter Gardens, Palms, etc.—A. W. Livingson's Sons, Columbus, Ohio; Vegetable and Flower Seeds.—Pitcher & Manda, The United States Nurseries, Short Hills, N. J.; Descriptive Catalogue of New and Rare Plants. Also Price List of Hardy Perennials, including Alpines, Aquatics, Orchids, Ferns and Small Shrubs.

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